School Programs
2013–2014

Outdoor Experiential Education
Your environmental field trip destination
OUR EDUCATIONAL MISSION

Education at Royal Botanical Gardens encourages environmental stewardship by providing meaningful and diverse learning experiences that connect people with the wild and cultivated plant world and help them to understand the crucial role that plants play in sustaining and enhancing our lives and the environment.

You can download a PDF of this guide at www.rbg.ca/schools.

ABOUT US

Royal Botanical Gardens is a living museum covering 1,100 hectares of display gardens and natural areas that celebrate the relationship between humanity and nature. We are Canada’s biodiversity hot spot — home to more species of wild plants than any other area in the country. We have been offering hands-on learning experiences that connect children and nature since 1947.

Our staff are enthusiastic educators who delight in sharing their passion for the natural world and environmental stewardship, and designing and delivering dynamic, curriculum-based learning experiences for students.

Come and learn with us as we explore the relationship between the plant world, society and the environment.

What makes RBG UNIQUE:

• **Our programs** — meet Ontario curriculum requirements, are developed by certified teachers and facilitated by trained outdoor educators to meet Ministry of Education expectations.

• **Our setting** — is Canada’s biodiversity hot spot, part of the Niagara Escarpment World Biosphere Reserve, and the Ontario Greenbelt. RBG is a National Historic Site of Canada that contains Class 1 wetlands and provincial Areas of Natural and Scientific Interest, and has been declared a nationally Important Bird Area and an Important Area for Reptiles and Amphibians.

• **Students experience** — hands-on learning in a living laboratory, using 21st-century technology like data loggers, digital cameras and GPS units.

• **Our experience** — includes 66 years of education programming that builds meaningful connections with nature and a sense of environmental stewardship.

• **Our commitment** — is to provide exceptional and accessible service. Call to find out how we can accommodate your needs.

EN FRANÇAIS?

French instruction is now available for any of our programs, limited to one class at a time (maximum 30 students).

Please call us to discuss details at 905-527-1158, ext. 276

FEATURED PROGRAM AREAS

See map on page 15

Nature Interpretive Centre (NIC), Arboretum, 20A Old Guelph Road, Dundas

Rock Chapel Sanctuary, Rock Chapel Road, Dundas

Cootes Paradise Fishway, Princess Point, Hamilton

RBG Centre and Hendrie Valley, 680 Plains Road West, on the Burlington/Hamilton border
It can take up to ten days for the trap to open. Native to: North and South Carolina. The specialized leaves of the plant snap shut when stimulated by prey. 

VENUS FLYTRAP (Dionea) 
The leaf then curls around the insect, so that it can’t escape.

Native to: Every continent except Antarctica. Insects get stuck in the sticky nectar that covers the plant’s leaves.

SUNDEW (Drosera) 
covered with downward pointing hairs making it difficult for prey to escape.

Native to: Southeast Asia, Pacific. The insides of the “pitchers” are slick and tough for prey to escape.

Native to: North America. Slippery footing at the pitchers’ rim causes insects to fall to the bottom.

SAVAGE GARDENS 
Don’t miss the larger-than-life Venus flytrap and other real and imaginary carnivorous plants in our Savage Gardens

JANUARY 18 to APRIL 13, 2014; RBG CENTRE 
This winter RBG is hosting two exhibits! Savage Gardens features carnivorous plants and is complemented by awesome animal adaptations in Nature’s Ninjas. See larger-than-life sculptures of carnivorous plants, and come face-to-face with over 20 live animals as these two exhibits merge into one dynamic learning experience!

Programs offered during Savage Gardens/Nature’s Ninjas exhibit:
1. Savage Gardens and Nature’s Ninjas (ECE/K)
2. Characteristics and Needs of Living Things: Savage Gardens and Nature’s Ninjas (Primary)
3. Growth and Changes in Animals: Nature’s Ninjas (Primary)
4. Growth and Changes in Plants: Savage Gardens (Primary)
5. Habitats and Communities: Going to Extremes (Junior)
7. Sketching Savage Gardens and Nature’s Ninjas (Intermediate/Secondary)
8. Exhibit Photography Workshop (Secondary)

REGISTRATION INFORMATION
9:30 a.m. OR 12 p.m. noon or book a full-day program

EXHIBIT PROGRAM FEE $9/student

Teachers! — Book your program by October 31, 2013 and receive 1 complimentary family pass to the exhibit.

CALL TO BOOK TODAY!
905-527-1158, ext. 276 or www.rbg.ca/ninjas for more information.
EARLY EDUCATION (Preschool through SK)

PROGRAM

Creatures with Wings and Crawly Things
Tweet, Tweet, Oh So Sweet
Nature’s Gift: Winter
Making Sense of Nature
Savage Gardens & Nature’s Ninjas
Self-Guided: Nature Interpretive Centre
Self-Guided: Hendrie Valley

Meets various expectations within the Ontario Curriculum

Science and Technology, Personal and Social Development
Science and Technology, Personal and Social Development
Science and Technology, Personal and Social Development
Science and Technology, Personal and Social Development
Science and Technology, Personal and Social Development

CREATURES WITH WINGS AND CRAWLY THINGS
September to October, May to June
NIC or RBG Centre
Get up close and personal with caterpillars, butterflies, chipmunks and chickadees, view the world through bug eyes, and search for bugs. Designed for high-energy, hands-on learners.

TWEET, TWEET, OH SO SWEET
November to April
NIC
Explore our gardens and forests in search of birds, learn their calls, and search for their homes, food and water. Build a bird, make a suet bird feeder, examine nests and feathers with magnifiers — this well-paced program keeps active minds and bodies busy indoors and outdoors.

NATURE’S GIFT: WINTER
November to January
NIC
Explore the delights of late autumn and winter while on a hike followed by indoor activities. Learn about seasonal changes and how plants and animals get ready for winter, then create a tasty treat for wildlife to enjoy.

MAKING SENSE OF NATURE
September to June
RBG Centre
People have five senses, but mostly use just one. In this program students use their five senses as they explore the varied gardens of RBG’s Veggie Village and Hendrie Park to help them make sense of nature.

NEW — SPECIAL
Savage Gardens & Nature’s Ninjas
January to April
RBG Centre
Explore our Savage Gardens/Nature’s Ninjas exhibits and get a bug’s-eye view of a Venus Flytrap and other carnivorous plants. Check out the amazing ways some animals protect themselves. Through live animal shows, interactive games and hands-on investigation, students learn about the needs of plants and animals for food, water, air and shelter.

INQUIRY-BASED LEARNING PROGRAMS

We believe in self-directed learning and allowing children to construct knowledge principles through active, hands-on learning. Educate the whole child and immerse your class in a botanically themed seasonal set of programs designed to build upon learning experiences from visit to visit.

Programs have been designed as units to explore the seasonal changes and botanical variability that occur in ecosystems. Who better than RBG to make plants exciting for your students?!

Choose from a set of six programs including:
1. Veggie Village (Food Security and Vegetable Gardening)
2. Princess Point (Prairie Ecosystems)
3. Rock Chapel (Cliff Ecosystems, Geology, Soils and Plants on the Edge)
4. Arboretum (Wetlands and Marshes)
5. Arboretum (Carolinian Forest)
6. Mediterranean Garden (Mediterranean Biome exploration)

PROGRAM FEES: Day package rates and minimum participant requirements apply (see back cover)

BUNDLE DISCOUNTS
Book 4 of 6 10% OFF
Book 5 of 6 13% OFF
Book 6 of 6 15% OFF

Any school or class can participate in our Inquiry-Based Learning programs, please call 905-527-1158, ext. 276 or email edtour@rbg.ca to inquire.
<table>
<thead>
<tr>
<th>Grade</th>
<th>PROGRAM</th>
<th>Meets various Ontario Curriculum expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>Characteristics and Needs of Living Things</td>
<td>Characteristics and Needs of Living Things</td>
</tr>
<tr>
<td>Grade 1</td>
<td>Characteristics &amp; Needs of Living Things: Savage Gardens and Nature’s Ninjas</td>
<td>Characteristics and Needs of Living Things</td>
</tr>
<tr>
<td>Grade 1</td>
<td>Fall into Winter</td>
<td>Daily and Seasonal Cycles</td>
</tr>
<tr>
<td>Grade 1</td>
<td>Bird Bonanza</td>
<td>Characteristics and Needs of Living Things</td>
</tr>
<tr>
<td>Grade 1</td>
<td>Go MAD! Animals – Move, Adapt or Die</td>
<td>Characteristics and Needs of Living Things</td>
</tr>
<tr>
<td>Grade 1</td>
<td>Fishway Demonstration</td>
<td>Characteristics and Needs of Living Things</td>
</tr>
<tr>
<td>Grade 2</td>
<td>Growth and Changes in Animals</td>
<td>Growth and Changes in Animals</td>
</tr>
<tr>
<td>Grade 2</td>
<td>Growth and Changes in Animals: Nature’s Ninjas</td>
<td>Growth and Changes in Animals</td>
</tr>
<tr>
<td>Grade 2</td>
<td>Go MAD! Animals – Move, Adapt or Die</td>
<td>Growth and Changes in Animals</td>
</tr>
<tr>
<td>Grade 2</td>
<td>Fall into Winter</td>
<td>Growth and Changes in Animals</td>
</tr>
<tr>
<td>Grade 2</td>
<td>Air and Water</td>
<td>Air and Water in the Environment</td>
</tr>
<tr>
<td>Grade 2</td>
<td>Bird Bonanza</td>
<td>Growth and Changes in Animals</td>
</tr>
<tr>
<td>Grade 2</td>
<td>Fishway Demonstration</td>
<td>Growth and Changes in Animals</td>
</tr>
<tr>
<td>Grade 2</td>
<td>Holiday Traditions</td>
<td>Traditions and Celebrations</td>
</tr>
<tr>
<td>Grade 3</td>
<td>Growth and Changes in Plants</td>
<td>Growth and Changes in Plants</td>
</tr>
<tr>
<td>Grade 3</td>
<td>Growth and Changes in Mediterranean Plants</td>
<td>Growth and Changes in Plants</td>
</tr>
<tr>
<td>Grade 3</td>
<td>Growth and Changes in Plants: Veggie Village</td>
<td>Growth and Changes in Plants</td>
</tr>
<tr>
<td>Grade 3</td>
<td>Growth and Changes in Plants: Savage Gardens</td>
<td>Growth and Changes in Plants</td>
</tr>
<tr>
<td>Grade 3</td>
<td>Soils in the Environment</td>
<td>Soils in the Environment</td>
</tr>
<tr>
<td>Grade 3</td>
<td>Fall into Winter</td>
<td>Growth and Changes in Plants</td>
</tr>
<tr>
<td>Grades 1–3</td>
<td>Look, See, Paint! (Primary)</td>
<td>Visual Arts</td>
</tr>
<tr>
<td>Grades 1–3</td>
<td>Self-Guided: Nature Centre</td>
<td></td>
</tr>
<tr>
<td>Grades 1–3</td>
<td>Self-Guided: Hendrie Valley</td>
<td></td>
</tr>
<tr>
<td>Grade 3</td>
<td>Chocolate: From Tree to Treat</td>
<td>(Videoconference only)</td>
</tr>
</tbody>
</table>

**Characteristics and Needs of Living Things**

*September to October and May to June NIC or RBG Centre*

Learn what animals need to survive! Students take a closer look at the insects, birds and mammals that call RBG home. Through interactive games and hands-on investigation, students learn about the needs of all animals for food, water, air and shelter.

**NEW — Special**

**Characteristics & Needs of Living Things: Savage Gardens and Nature’s Ninjas**

*January to April RBG Centre*

As students explore our Savage Gardens/Nature’s Ninjas exhibits, they learn about the amazing and bizarre extremes that some plants and animals go to in order to survive. Through interactive games and hands-on investigation, students learn about the needs of all animals for food, water, air and shelter, and the relationships they share with other species.

**Growth and Changes in Animals**

*September to October and May to June NIC*

All animals grow, change and are affected by the environment around them. Through interactive games and nature exploration, students discover the similarities and differences between some of Ontario’s native species, and learn about some of the positive actions people can take to help local wildlife. **HIGHLIGHT:** wildlife viewing.

**NEW — Special**

**Growth and Changes in Animals: Nature’s Ninjas**

*January to April RBG Centre*

Animals will do almost anything to survive! Explore Nature’s Ninjas and discover some of the more extreme behaviours and physical traits that some animals have evolved to protect themselves. Through live animal shows, interactive games and activities, students can further explore some other unusual characteristics of animals.

**Air and Water**

*November to March NIC or RBG Centre*

All living things need air and water to survive. Students investigate the properties of air and water through a series of hands-on experiments. They then make connections between living things, air and water through exploring the plants and animals that call RBG home.
<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Holiday Traditions**  
*November to December*  
*RBG Centre*  | Many of the world’s cultures have celebrations to brighten the cold, dark days of early winter. Through legends and folklore, students explore some of the ways that plants are used in seasonal traditions, and get outside to enjoy some of the natural beauty of the season. Plus, enjoy the RBG Train Show. |
| **Growth and Changes in Plants**  
*Trip location dictated by seasons, see description for details*  | Our survival depends on plants. They are our medicine, our food, our shelter. Join us for an interpretive outdoor exploration of Canada’s biodiversity hot spot to learn about Ontario flora and how plants are affected by the environment around them. Taking different historical and modern perspectives, students learn some elementary botany and walk away with a pot of native seeds for a school or home garden.  
**Three location options:**  
1. Nature Centre (NIC); Spring and Fall  
2. Mediterranean Garden, RBG Centre; Winter  
3. Veggie Village, RBG Centre / Hendrie Park; June |
| **NEW — Special**  
**Growth and Changes in Plants: Savage Gardens**  
*January to April*  
*RBG Centre*  | What happens when plants become meat-eaters? Explore the larger-than-life *Savage Gardens* exhibit and get a bug’s eye view of some of the amazing ways plants fulfill their need for protein. Hands-on activities and interactive games round out the program. |
| **Soils in the Environment: More than Dirt**  
*September to October and May to June*  
*NIC*  | Get your hands dirty while exploring the life that lives below our toes, and find out how both weather and humans impact the underworld! Bugs, dirt, lab work — what child wouldn’t “dig” this hands-on program? |
| **Fall into Winter: Daily and Seasonal Cycles**  
*November to December*  
*NIC or RBG Centre*  | Transitioning from season to season brings great changes to any ecosystem. By exploring our sanctuaries and/or greenhouse, witness those changes in plants, animals, and birds as they prepare for the cold winter ahead. |
| **Bird Bonanza**  
*November to March*  
*NIC*  | The power of flight gives these creatures an opportunity like no other. With over 250 bird species travelling through our property, come get a first-hand glimpse of their world as we broaden your knowledge of our ever-feathery friends.  
**HIGHLIGHT:** hand-feeding the chickadees. |
| **Go MAD! Animals — Move, Adapt or Die**  
*January to March*  
*NIC or RBG Centre*  | With every step, flutter or wiggle, living creatures are in constant survival mode. Explore their world and see what they’ve done in order to survive as a species! |
| **Special**  
**Fishway Demonstration**  
*October 6 and Monday to Thursday mornings, May 1 to June 20*  
*Princess Point*  
*Maximum 35 students*  | Come face to face with our scaly friends and help our biologists decide who belongs in our Class 1 Wetland. A state-of-the-art structure combined with a plethora of activities will open your eyes to the underwater world, and all that inhabit it.  
**Facility is wheelchair accessible** |
| **Look, See, Paint!**  
*Year round*  
*NIC or RBG Centre*  
*Maximum 30 students*  | Explore and observe nature and record your observations using our high-quality watercolour kits. After instruction and experimentation with watercolours, your class will paint to their heart’s content. |

Complete program descriptions and online resources available at our teacher portal at [www.rbg.ca/schools](http://www.rbg.ca/schools)
**Junior Grade PROGRAM**

<table>
<thead>
<tr>
<th>Grade</th>
<th>PROGRAM</th>
<th>Meets various Ontario Curriculum expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 4</td>
<td>Go MAD! Animals – Move, Adapt or Die</td>
<td>Habitats and Communities</td>
</tr>
<tr>
<td>Grade 4</td>
<td>Fishway Demonstration</td>
<td>Habitats and Communities</td>
</tr>
<tr>
<td>Grade 4</td>
<td>Species-at-Risk</td>
<td>Habitats and Communities</td>
</tr>
<tr>
<td>Grade 4</td>
<td>Nature’s Web</td>
<td>Habitats and Communities</td>
</tr>
<tr>
<td>Grade 4</td>
<td>Rocks, Minerals and Erosion</td>
<td>Rocks, Minerals and Erosion</td>
</tr>
<tr>
<td>Grade 4</td>
<td>Habitats and Communities: Going to Extremes</td>
<td>Habitats and Communities</td>
</tr>
<tr>
<td>Grade 6</td>
<td>Biodiversity: Wetlands</td>
<td>Biodiversity</td>
</tr>
<tr>
<td>Grade 6</td>
<td>Fishway Demonstration</td>
<td>Biodiversity</td>
</tr>
<tr>
<td>Grade 6</td>
<td>Ecosystems in Motion</td>
<td>See connections for individual programs selected</td>
</tr>
<tr>
<td>Grades 4–6</td>
<td>ZimSculpt</td>
<td>Arts</td>
</tr>
<tr>
<td>Grades 4–6</td>
<td>Look, See, Paint! (Junior)</td>
<td>Visual Arts</td>
</tr>
<tr>
<td>Grades 4–6</td>
<td>Self-Guided: Nature Centre</td>
<td></td>
</tr>
<tr>
<td>Grades 4–6</td>
<td>Self-Guided: Hendrie Valley</td>
<td></td>
</tr>
<tr>
<td>Grade 4</td>
<td>Chocolate Ecosystems</td>
<td>(Videoconference only)</td>
</tr>
</tbody>
</table>

---

**Biodiversity: Wetlands**  
*September to October* and *May to June*  
NIC

A sponge, a filter and a home to thousands; nature’s wetlands are crucial to the success of life surrounding the RBG. Become an aquatic biologist for the day, and help determine the health and well-being of our water. By taking part in experiments, gain an understanding of, and appreciation for, the creatures that depend on fresh water.

---

**Rocks, Minerals and Erosion**  
*September to October* and *May to June*  
Rock Chapel Nature Sanctuary

Rocks and minerals are, quite literally, the foundation on which we stand and build our civilization. The varied characteristics of different rocks and minerals determine how they are used in our day to day lives. Students test, classify and compare different rocks, investigate ways in which erosion can change the landscape, and explore the different rock layers of the Niagara Escarpment.

---

**Habitats and Communities: Nature’s Web**  
*September to October* and *May to June*  
NIC

All living things depend on each other. As they make their way through our nature sanctuary, students explore the links and relationships between the plants and animals that live in our forests and wetlands through games and hands-on exploration.

---

**NEW — Special**  
**Habitats and Communities: Going to Extremes**  
*January to April*  
RBG Centre

What happens to plants and animals in extreme environments? In *Savage Gardens* and *Nature’s Ninjas*, students discover some of the amazing and bizarre adaptations some plants and animals have in order to survive in extreme habitats. Through live animal shows, interactive games and hands-on investigation, students learn just how far nature can go.

---

Complete program descriptions and online resources available at our teacher portal at [www.rbg.ca/schools](http://www.rbg.ca/schools).
HOME-SCHOOLER’S AFTERNOONS AT THE NATURE CENTRE
1 to 3 p.m. at the Nature Centre.
Session Fee: $70 Fall/Winter (Sept. to Jan.);
$65 Spring/Summer (Feb. to June)
Single class fee: $15/student (includes HST)

AGES 4–12
2nd and 4th Tuesday of each month
Sept.10: ZimSculpt at RBG Centre
Sept.24: Mushrooms
Oct. 8: Autumn Colour
Oct. 22: Nature Sketching
Nov. 12: Wild Seeds
Nov. 26: Fall into Winter
Dec. 10: Holiday Traditions at RBG Centre
Jan. 14: Winter Wildlife
Jan. 28, Astronomy, 6:30 – 8 p.m.
Feb. 11: Savage Gardens/Nature’s Ninjas at RBG Centre
Feb. 25: Ice and Snow
Mar. 25: Maple Syrup
April 8: Signs of Spring
April 22: Planet Earth
May 13: Life in a Pond
May 27: Canoeing
June 10: Veggie Village at RBG Centre

Special ZimSculpt September RBG Centre
See some of Zimbabwe’s famous stone sculptures, and meet the artists that make them. Students learn about the inspiration and techniques that go into turning a piece of stone into a work of art, then create their own miniature masterpieces.

Fishway Demonstration Refer to page 10, content adapted to Junior level
Look, See, Paint! Refer to page 10, content adapted to Junior level
Go MAD! Animals — Move, Adapt or Die Refer to page 6, content adapted to Junior level
Ecosystems in Motion: Sunset to Sunrise Refer to page 9, content adapted to Junior level

August 17 to September 30; Hendrie Park
The award-winning Zimbabwean stone sculpture exhibit, ZimSculpt, returns to RBG.

Immerse yourself in this authentic, hands-on learning experience with your students. Satisfy multiple Arts curriculum expectations. See the sculptures, meet the artists, and create your very own miniature carving. Combine with another program and make a day of it!
**Interactions in the Environment**

*September, October (pond availability may be limited in the Fall)*  
*Half- or full-day programs*  
*April to June  
NIC or RBG Centre*

Students explore either a pond or forest ecosystem, identifying biotic and abiotic elements, components of food webs and evidence of energy flows and matter cycling. Through observations and simulations they examine limiting factors within the systems and possible consequences of human activity.

**Species at Risk**

Refer to page 12, content adapted to Intermediate level

**Diversity of Living Things: Wetlands**

Refer to page 12, content adapted to Intermediate level

**Biology: Cells to Systems**

*Year round*  
*NIC or RBG Centre*

A close encounter of a biological kind! This science adventure takes you from the smallest unit of life to complex, multi-functioning systems. Activities include exploring different cell types and functions of the organelles through our cellular melting pot game and investigating the five main systems of the body.

**Ecosystems in Motion: Sunrise to Sunset**

*September, May and June  
NIC*

Overnight adventure-based program! Immerse yourself in nature for 23 hours of action-packed initiatives. Your choice of three intermediate half-day programs and night activities.  
**HIGHLIGHT:** students experience sleeping outdoors in tents.  
**PROGRAM OPTIONS** (choose 3, details online):
- Wetland Explorations
- Team Building Challenges I
- Team Building Challenges II
- Paddle Paradise I
- Paddle Paradise II
- Outdoor Games and Sports
- Astronomy
- Geocaching: Orienteering with a Twist

Full descriptions at [www.rbg.ca/schools](http://www.rbg.ca/schools)

**New — Special**

**Digital Photography: Savage Gardens/Nature’s Ninjas**

*January to April  
RBG Centre  
Maximum 30 students*

Discover the possibilities of digital photography as an artistic medium. Students are given an introduction to the basics of digital photography and the features of our cameras. They then head out to take pictures in Savage Gardens/Nature’s Ninjas exhibit. Cameras provided.
**Special**
**Digital Photography: Nature through the Lens**
**Year round**
NIC or RBG Centre
**Maximum 30 students**
Discover the natural world while exploring the possibilities of digital photography as an artistic medium. Students are given an introduction to the basics of digital photography and the features of our cameras. They then head out to take pictures in the gardens and natural lands of RBG. Cameras provided.

**Special**
**ZimSculpt**
**September**
RBG Centre
Zimbabwe is famous for its stone sculptures. Come meet the artists as they work. Find out what inspires them, how they apply the elements of art and the principles of design, and what techniques and materials they use. Students create their own soapstone piece.

**New — Special**
**Sketching Savage Gardens and Nature’s Ninjas**
**January to April**
RBG Centre
**Maximum 30 students**
Using our Savage Garden/Nature’s Ninjas exhibits as inspiration, students can develop their basic drawing skills. Students learn about shapes, shading and perspective using sketching pencils, with a focus on entomology or plant anatomy.

**Fishway Demonstration**
**Mornings, September 11 to October 6 and Monday to Thursday mornings, May 1 to June 20**
Princess Point
Visit a key component in the restoration of Cootes Paradise, the largest freshwater wetland restoration project in North America. Interpreters and aquatic ecologists explain the function of the barrier, how it is used as a scientific tool, share fish facts, highlight how the Fishway has helped marsh inhabitants and more!

**Look, See, Paint!**
**Year round**
NIC or RBG Centre
**Maximum 30 students**
Connect your students to the natural world. This program allows them to explore watercolour as a medium, hone their observational skills and use painting as a way of recording nature observations during a hands-on workshop spent painting outdoors.

**NATURAL PLAYGROUND AT RBG**
This playground facilitates creative, active outdoor play. Built from natural materials and CSA-approved, it offers children a variety of multi-sensory experiences, opportunities for gross- and fine-motor skill development, cooperative play and good old-fashioned fun. Visit a tree house, look into a wetland, jump, climb and explore at RBG!

School programs booked at RBG Centre include time in the playground if time permits.

Regular admission rates apply for self-guided groups (4 and under $5.25/child)

---

**VIDEO CONFERENCE**
Request a VC with your on-site outdoor field trip to enhance your experience globally — inquire for details.

---

**Play**
**Be Active**
**Learn**
### SECONDARY

<table>
<thead>
<tr>
<th>Grade</th>
<th>PROGRAM</th>
<th>Meets various Ontario Curriculum expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 9</td>
<td>Ecosystems in Motion</td>
<td>See connections for individual programs selected</td>
</tr>
<tr>
<td>Grade 9</td>
<td>Human Environment Interaction</td>
<td>Geography – Human-Environment Interactions</td>
</tr>
<tr>
<td>Grade 9</td>
<td>Sustainable Ecosystems and Human Activity</td>
<td>Science – Sustainable Ecosystems</td>
</tr>
<tr>
<td>Grade 9</td>
<td>Fishway Demonstration</td>
<td>Geography – Human-Environment Interactions / Understanding and Managing Change</td>
</tr>
<tr>
<td>Grade 9</td>
<td>Fishway Demonstration</td>
<td>Science – Sustainable Ecosystems</td>
</tr>
<tr>
<td>Grade 9</td>
<td>Species at Risk</td>
<td>Science – Sustainable Ecosystems</td>
</tr>
<tr>
<td>Grade 10</td>
<td>Climate Change</td>
<td>Science – Climate Change</td>
</tr>
<tr>
<td>Grade 11</td>
<td>Diversity of Living Things</td>
<td>Biology – Diversity of Living Things</td>
</tr>
<tr>
<td>Grade 11</td>
<td>Species-at-Risk</td>
<td>Science – Human Impact on the Environment</td>
</tr>
<tr>
<td>Grade 11</td>
<td>Fishway Demonstration</td>
<td>Environmental Science – Diversity of Living Things</td>
</tr>
<tr>
<td>Grade 11</td>
<td>Plants in the Natural Environment</td>
<td>Biology – Plants in the Natural Environment</td>
</tr>
<tr>
<td>Grade 11</td>
<td>Impacts on the Environment: Cootes Paradise</td>
<td>Science – Human Impact on the Environment / Biology – Environmental Science ✓</td>
</tr>
<tr>
<td>Grade 11</td>
<td>Natural Resources Science</td>
<td>Environmental Science – Natural Resources Science</td>
</tr>
<tr>
<td>Grade 11</td>
<td>Plant Anatomy, Growth and Function</td>
<td>Biology – Plant Anatomy, Growth and Function</td>
</tr>
<tr>
<td>Grades 10/12</td>
<td>Green Industries — Horticulture</td>
<td>Green Industries</td>
</tr>
<tr>
<td>Grades 9–11</td>
<td>Look, See, Paint!</td>
<td>Visual Arts</td>
</tr>
<tr>
<td>Grades 9/11</td>
<td>Geocaching</td>
<td>Physical Education – Active Living</td>
</tr>
<tr>
<td>Grades 9/11</td>
<td>Global Positioning System</td>
<td>Geography – Methods of Geographic Inquiry</td>
</tr>
<tr>
<td>Grades 9–12</td>
<td>Nature Photography Workshop</td>
<td>Media / Visual Arts</td>
</tr>
<tr>
<td>Grades 9–12</td>
<td>Special: Exhibit Photography Workshop</td>
<td>Media / Visual Arts</td>
</tr>
<tr>
<td>Grades 9–12</td>
<td>Sketching Savage Gardens and Nature’s Ninjas</td>
<td>Media / Visual Arts</td>
</tr>
<tr>
<td>Grades 9–12</td>
<td>ZimSculpt</td>
<td>Visual Arts</td>
</tr>
<tr>
<td>Grades 9–11</td>
<td>Self-Guided: Nature Centre</td>
<td></td>
</tr>
<tr>
<td>Grades 9–11</td>
<td>Self-Guided: Hendrie Valley</td>
<td></td>
</tr>
</tbody>
</table>

#### Special Programs

- **Global Positioning System**
  - Year round
  - NIC or RBG Centre
  - Half-day

  Tap into the digital world of GPS navigation. After an introduction to our GPS units and the ways in which GPS-technology is used in research, collections management and mapping with real-world examples from RBG, students test their skills on our GPS challenge course.

- **Geocaching**
  - Year round
  - NIC or RBG Centre
  - Half-day

  Try out Geocaching. Through a hands-on tutorial, students are introduced to the basic operation of Global Positioning System (GPS) hand units, then test their newly acquired navigation skills as they explore the local scenery in search of a hidden treasure. Warning: highly addictive sport!

- **Green Industries: Horticulture**
  - Year round
  - RBG Centre
  - Half-day or full-day programs

  Learn about the "green" industry of horticulture in the context of the skills and knowledge needed to operate a major plant museum and tourist attraction via the following modules: GPS-based mapping, propagation, interior plantscaping, habitat restoration, integrated pest management, landscape architecture and plant maintenance.

- **ZimSculpt**

  Refer to page 10, content adapted to grade level

- **Sketching Savage Gardens and Nature’s Ninjas**

  Refer to page 10, content adapted to grade level

- **Climate Change**
  - Year round
  - NIC or RBG Centre

  Investigate the natural and anthropogenic factors that influence the earth’s climate. Through experimentation and simulations, students investigate the ways in which our climate is changing, how we contribute to climate change, and consider initiatives that address the issue.
### Diversity of Living Things
**October and May**
**NIC**

Learn the principles of taxonomy through hands-on sampling. In this program, students collect and classify aquatic macro-invertebrates, and learn how the data they've collected can be used to determine the health of an ecosystem.

### Impacts on the Environment: The Fall and Rise of Cootes Paradise
**April to June**
**NIC**

Cootes Paradise went from a thriving marsh to a wetland in distress. In this program, students investigate the ways humans have negatively affected this area, and explore some of the projects that are restoring it back to what it once was.

### Natural Resource Science
**May and June**
**NIC or RBG Centre**

Investigate how we use, monitor and classify natural resources. In this program, students use investigations and hands-on activities to explore how our use and harvesting of natural resources impacts ecosystem sustainability.

### Plants in the Natural Environment
**September/October or May/June**
**NIC or RBG Centre**

RBG is Canada’s plant biodiversity hot spot. Students hike through our living laboratory and examine the role of plants in various habitats, learn about plant taxonomy and identification and see how plant conservation takes place at RBG at genetic, species and ecosystem levels.

### Plant Anatomy, Growth and Function
**September/October or May/June**
**NIC or RBG Centre or Rock Chapel**

This program can be customized based on teacher needs. Options include either a focus on plant succession through a field study at our living plant succession exhibit at Rock Chapel Sanctuary; or an ethnobotany survey that examines useful plants including healing plants in our Medicinal Plant Collection; or plant growth, reproduction and propagation in our Mediterranean Greenhouse.

### Ecosystems in Motion: Sunrise to Sunset

Refer to page 9, content adapted to grade level

### Species at Risk
**September to October and April to June**
**NIC**

Is it possible to see native species go extinct in our own backyard? As we continue to see invasives take over their homes, plants and animals face a tough existence. Experience the protection put in place, and learn how you, too, can help monitor the well-being of dwindling species.

**NEW — Special Exhibit Photography Workshop**
**January to April**
**RBG Centre**

Maximum 30 students

After an introduction to our digital cameras, students explore our *Savage Gardens/Nature’s Ninjas* exhibit and develop their technical skills in wildlife photography, macro-photography, and architectural photography. Cameras provided.

**Special Nature Photography Workshop**
**Year round**
**NIC or RBG Centre**

Maximum 30 students

After an introduction to our digital cameras, students explore our trails and gardens and develop their technical skills in wildlife photography, macro-photography, and landscape and perspective photography.

### Fishway Demonstration

Refer to page 10, content adapted to grade level

### Look, See, Paint!

Refer to page 10, content adapted to grade level

---

**Human-Environment Interactions**

**September to May**
**NIC or RBG Centre**

How do humans impact the environment? What impact does the natural environment have on human activity? Students explore the answers to these questions by using Cootes Paradise as a case study. Choose two of the following one-hour modules for a half-day program or all four for a full-day program:

1. **Ecological Footprinting:** How many planets would it take to support Earth’s population if everyone lived a North American lifestyle? Students determine their own “ecological footprint.”

2. **Cootes Paradise — past to present:** Through the use of our displays and GIS maps, students track the impact of human-environment interactions from pre-contact Aboriginal peoples to the present day, in Cootes Paradise. A game show-style quiz tests the student’s research.

3. **Project Paradise:** On a guided hike along the shores of Cootes Paradise, students learn about Project Paradise and what is being done to restore our marsh to its former glory. Students use data loggers to conduct scientific tests to measure some of the changes.

4. **Planning Paradise:** What would you do if Cootes Paradise was yours to do with as you pleased? Would you exploit its natural resources? Build an industrial centre? A transportation hub? A wilderness retreat? Using real geographical data and working in small groups, students develop a land use plan.

Complete program descriptions and online resources available at our teacher portal at [www.rbg.ca/schools](http://www.rbg.ca/schools)
2013/2014 SENIOR STUDENT SYMPOSIA

Plant Power: The World of Plant Biology and Ecology

Fall 2013 Symposium
Tuesday, October 1, 2013; RBG Centre

Each year, Royal Botanical Gardens offers a unique experiential learning opportunity for senior high school students. We invite well-known environmental scientists to speak and share their work focused on the natural world, then complement this with outdoor workshops that offer hands-on learning experiences.

Beginning in spring 2013 and each semester going forward, we are offering a program focused on plant biology, ecology and biodiversity. We are exploring diversity within the plant world, from plant structures and functions, to factors affecting plant growth, survival and sustainability of ecosystems, connections with the animal world, First Nations plant uses, species at risk conservation, invasive species research and more. Join us for hands-on, minds-on learning in the field!

Spring 2014 Symposium
Thursday, May 15, 2014; RBG Centre

Detailed programs for these symposia are available online by August 31. www.rbg.ca/schools

Register early, as space sells out quickly.

Sustainable Ecosystems
Full-day, September, October, April to June

Human survival depends on sustainable ecosystems. During this program, students examine the issues around human impacts on several different ecosystems. Customize your field study to your curriculum needs. Choose two to four of seven one-hour long eco-studies. Our booking clerk and interpreters work with you to design a program that fits within the timeframe you have available. NOTE: transportation may be required between program sites.

1. Project Paradise: Restoration of a Wetland
   MEETING SITE: Princess Point, south shore of Cootes Paradise or NIC
   Students explore the following topics: loss of biodiversity, invasive species, water quality, reintroduction programs, habitat development and various rehabilitation projects.

2. Restoration Tool: Cootes Paradise Fishway
   MEETING SITE: Princess Point, south shore of Cootes Paradise
   Visit a key component in the restoration of Cootes Paradise, the largest freshwater restoration project in North America. Interpreters and aquatic ecologists explain the function of the barrier, how it is used as a scientific tool, share fish facts, highlight how the Fishway has helped marsh inhabitants and more!

3. Soil Ecosystems
   MEETING SITE: NIC
   Students compare the soils of two sites, analyzing various soil samples, testing for nitrogen, phosphorus, potassium and pH, and observe soil characteristics such as colour, moisture, texture and temperature.

4. Wetland Ecosystems
   MEETING SITE: NIC
   Investigate two wetland ecosystems, measuring biotic and abiotic characteristics to determine water quality and determine human impacts.

5. Forest Ecosystems
   MEETING SITE: NIC
   Students measure and compare species diversity in two forest plots and examine what factors related to human activity might affect diversity.

6. Invasive Species
   MEETING SITE: NIC
   On a guided hike, students examine case studies of several different invasive species, learning of their origins, spread, impacts and control, if any.

7. System Simulations
   MEETING SITE: NIC
   Through active simulation games, students examine limiting factors and carrying capacities in an ecosystem. Human impacts are also examined.

VIDEO CONFERENCE
Request a VC with your on-site outdoor field trip to enhance your experience globally — inquire for details.
VIRTUAL FIELD TRIPS

Royal Botanical Gardens has been offering education programs via videoconference since 2007, building on our 66 years of providing on-site public and school group programs. We can connect to any school, regardless of whether or not you have a videoconferencing system.

These interactive programs are plant-based and linked to your curriculum. After requesting a program, teachers receive packages with a presentation outline, and pre- and post- conference activities.

PROGRAMS for Primary and Junior:
Creatures with Wings and Crawly Things* (K–3); Insects in Winter (2–6); Plant Parts and Pumpkins (K–3); Seeds on the Go (3–4); Growing Seeds (3); Pollination Partners (3–6); Wetland Ways (4); Chocolate: From Tree to Treat (3).

PROGRAMS for Intermediate and Senior:
Plant Adaptations: Wetlands Plants (7–12); Plant Adaptations: Mediterranean Biome (7–12); Photosynthesis (6 – 12); Human Impacts on Ecosystems (7–12); Healing Plants (11); Plant Diversity and Evolution (11); Organic Gardening (7–12)

PROGRAMS for multiple grade levels:
Good Things come in Trees (K–6, 7–12); Pollination Partners (3–6) (9, 11–12); Seeds on the Go* (3–6, 9 and 11); Growing Seeds (3–6) (9 and 11); Colours in Nature (2–6) (11); Species at Risk (4, 6, 7–12)

*Also available in French

Check out [www.rbg.ca/schools](http://www.rbg.ca/schools) for program updates.

FREE Teacher PD Workshops:
Introduction to videoconferencing and the virtual field trips offered by RBG.

Special Presentations:
• Green Industries: Careers at Royal Botanical Gardens (7–12)
• PlantWatch (6–11)

How to book a program: Programs are by request except Special Presentations which are advertised for specific dates and times (see [www.rbg.ca/schools](http://www.rbg.ca/schools) for current dates). For more detailed program information visit [www.rbg.ca/videoconferencing](http://www.rbg.ca/videoconferencing), or check CILC, [www.cilc.org](http://www.cilc.org).

Fee: $130; Connection: IP (H.323) OR a software solution – FieldTripZoom

CONTACT: Karin Davidson-Taylor, Education Officer, ktdavidsontaylor@rbg.ca or 905-527-1158, ext. 249.

PROFESSIONAL DEVELOPMENT FOR TEACHERS

Custom environmental PD education programs available, contact Barbara McKeen at bmckeanc@rbg.ca or 905-527-1158, ext. 247.

Classroom Mini Marsh Workshop — April 2014
Bring a marsh into your classroom! This complimentary workshop teaches you about the ecology of a marsh, the importance of aquatic plants and other watershed areas of concern. Take this knowledge and a Mini Marsh kit back to the classroom. Your students plant the marsh and watch it grow. Call 905-527-1158 ext. 276 for dates and details.

Species-at-Risk Teacher Workshop (P, J, I, or S)
Find out about species-at-risk in your area and how you can support their survival. Look at how to integrate species-at-risk content across the curriculum, and become familiar with resources and simulations focusing on rare plants and animals. On-site at Royal Botanical Gardens or through a virtual field trip. Resource guide provided. Developed with support from Ontario Ministry of Natural Resources.

Back to Nature Network Presentations
Research shows that children who play and learn in nature are healthier, happier and smarter. RBG is a lead partner in the Back to Nature Network; learn more about connecting children and nature in a presentation that is ideal for staff or parent council meetings. The Back to Nature Network teacher’s guide, Into Nature, is a free guide to teaching in your schoolyard or local park. Download an English or French copy at [www.back2nature.ca](http://www.back2nature.ca).

ADULT EDUCATION AND PROFESSIONAL DEVELOPMENT

Our adult education courses provide many opportunities for teachers to refresh and update their plant- and nature-based knowledge, learn new skills, and gain new insight into the natural world.

Courses that teachers may find especially interesting include Monarch Tagging, Wildflower ID, Vegetable Gardening, Birdwatching and ID, Children’s Gardening, and Botanical Arts and Crafts.

Prices vary and pre-registration is essential. Call 905-527-1158, ext. 270 for details or register online through our secure service at [www.rbg.ca](http://www.rbg.ca).
SELF-GUIDED PROGRAMS

If you want to make your visit to Royal Botanical Gardens a full day experience without the costs of a second guided program, our self-guided programs may be the answer.

Along with the Arboretum and north shore trails, RBG Centre and Hendrie Park on Plains Road West along the Hamilton/Burlington border, or the Hendrie Valley trails, can also be used as resource sites for self-guided outdoor experiences. Trail maps are provided in advance or at Royal Botanical Gardens’ information desk. Other free resources available when you book a self-guided program include a multi-sensory scavenger hunt that is age-appropriate for your group, pencils, clipboards, hiking maps and bird seed.

RECOMMENDED TIME: 30 minutes to two hours.

AREAS TO HIKE: Arboretum and Cootes Paradise trails and nature sanctuary surrounding the Nature Interpretive Centre (NIC), Hendrie Park, Hendrie Valley nature sanctuary.

Hendrie Park collections include:
- Rose Garden: bloom time — May to September;
- Helen M. Kippax Garden: viewing time — April to October;
- Medicinal Garden: viewing time — May to September;
- World of Botany: bloom time — May to October;
- Veggie Village: bloom time — May to September.

REMINDERS

PLANNING
1. Submit an online reservation request at www.rbg.ca/schools
2. Await confirmation
3. Contact 905-527-1158, ext. 276 or edtour@rbg.ca with any questions, concerns or special requirements

LOCATION
Please review your confirmation materials closely for program location details. Our programs run at multiple sites on RBG’s property. Please direct your bus driver’s attention to the program location details on your booking confirmation.

PAYMENT
Due upon arrival and based on the confirmed number of students. We accept VISA, MasterCard, AmEx, debit, cheque and cash.
$10 administration fee for invoicing

CANCELLATION POLICY
Please inform Bookings at least ONE MONTH prior to your visit, otherwise you are charged the minimum booking fee (winter storms/school closures are exempt), unless program is rebooked.

WEATHER
We are a rain or shine facility. Please be prepared to be outdoors during your visit. Please share the What to Bring handout with your class — download this handout at www.rbg.ca/schools. For safety reasons, we request that all students wear close-toed shoes.

LUNCH
Please have your class bring “Litter-less” lunches. Please share the Litter-less Lunches handout with your class — download this handout at www.rbg.ca/schools. We encourage you to bring peanut-free snacks and lunches.

SPECIAL NEEDS AND ACCESSIBILITY
Please contact 905-527-1158 ext. 276 or edtour@rbg.ca to discuss any special needs or accessibility requirements.

ROYAL BOTANICAL GARDENS ALSO OFFERS
Day Camps, Youth Programs, and Custom Badge Programs for Sparks, Brownies, Guides, Beavers, Cubs and Scouts. For adult and family education programs, visit www.rbg.ca.
HOW TO USE THIS GUIDE

A successful and enjoyable trip comes from planning and preparation. This guide is designed to outline the planning process and to provide you with the necessary tools to ensure your trip to Royal Botanical Gardens is the highlight of your school year!

STEP 1. Choose program(s)
- Reservations are taken on a year-round basis.
- All half-day programs are two hours in length (9:30 to 11:30 a.m. or 12 to 2 p.m.). Any two programs can be combined to make up a full day (9:30 a.m. to 2 p.m.). Alternatively, some programs are full-day programs (4 hours in length). Program times can be flexible in order to accommodate travel constraints.
- Ensure that you choose one alternative date in the event that your first choice is unavailable.

STEP 2. Forms
- Visit our Teacher Portal at www.rbg.ca/schools and submit an online reservation request
- Check out these information sheets and share them with your class: “What to Bring” and “Litter-less Lunches.”

STEP 3. What to expect
- A booking confirmation is sent via email within two business days of receiving your reservation request. Please share its contents with all participating teachers/leaders. We also follow-up by phone to discuss your program details.
- Payment is due upon arrival based on the number of participants (cash/cheque/debit/VISA/MasterCard/AmEx). $10 administration fee for invoicing.
- Cancellation Policy — please inform Bookings at least ONE MONTH prior to your visit, otherwise you are charged the minimum booking fee (winter storms/school closures are exempt), unless program is rebooked.
- Please confirm program location and ensure you can direct your bus driver to the correct location.

STEP 4. Contact us
- Contact our bookings coordinator at 905-527-1158, ext. 276 or edtour@rbg.ca with any questions/concerns.

Bookings coordinator: 905-527-1158, ext. 276, Toll-free from Toronto/Oakville: 905-825-5040, ext. 276. NIC: 20A Old Guelph Road, Dundas, ON L9H 5Y6
RBG Centre: 680 Plains Road West, Burlington, ON L7T 4H4
Mailing address: P.O. Box 399, Hamilton, ON L8N 3H8

LEAD EDUCATION PARTNER

TD Friends of the Environment Foundation

2013–2014 SCHOOL PROGRAM FEES

DAY PACKAGES:

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Fee/student*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half-day Programs (2 hrs)</td>
<td>$7.50</td>
</tr>
<tr>
<td>Full-day Program (2 x 2 hrs OR 1 x 4 hr)</td>
<td>$14</td>
</tr>
<tr>
<td>Early Education Program (1.5 hrs)</td>
<td>$6.50/student**</td>
</tr>
<tr>
<td>Semi-guided (2 hrs program + 2 hrs self-guided)</td>
<td>$12/student*</td>
</tr>
<tr>
<td>Self-guided: Preschoolers/Early Education</td>
<td>$5.25/child</td>
</tr>
<tr>
<td>Self-guided: Elementary and Secondary</td>
<td>$6.25/student*</td>
</tr>
</tbody>
</table>

SPECIAL PROGRAMS:

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Fee/student*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibit (ZimSculpt, Savage Gardens/Nature’s Ninjas)</td>
<td>$9/student*</td>
</tr>
<tr>
<td>GPS, Geocaching, Green Industries, Look, See, Paint!, Digital Photography and Fishway</td>
<td>$9/student*</td>
</tr>
<tr>
<td>Senior Student Symposia</td>
<td>$14/student*</td>
</tr>
</tbody>
</table>

ADDITIONAL PROGRAM ADD-ONS:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Fee/participant**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canoe rental</td>
<td>+$5/participant**</td>
</tr>
<tr>
<td>Snowshoe rental</td>
<td>+$3/participant**</td>
</tr>
<tr>
<td>Firepit rental</td>
<td>+$25/group**</td>
</tr>
</tbody>
</table>

** Fee is in addition to applied day-package rate (above)

OVERNIGHT PACKAGES:

<table>
<thead>
<tr>
<th>Program</th>
<th>Fee/student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecosystems in Motion Program</td>
<td>$45/student</td>
</tr>
</tbody>
</table>

VIRTUAL FIELD TRIPS:

<table>
<thead>
<tr>
<th>Program listing on page 14, for all grade levels</th>
<th>Fee/program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program listing on page 14, for all grade levels</td>
<td>$130/program</td>
</tr>
</tbody>
</table>

ONE FREE ADULT is allowed for every 4 Primary students, one free adult for every 5 students above the Primary level. Additional adults are charged the program fee. Ratio is 1:1 for special needs groups, support workers are exempt from additional fees. Listed rates may be subject to change without notice.